

FIG. 1

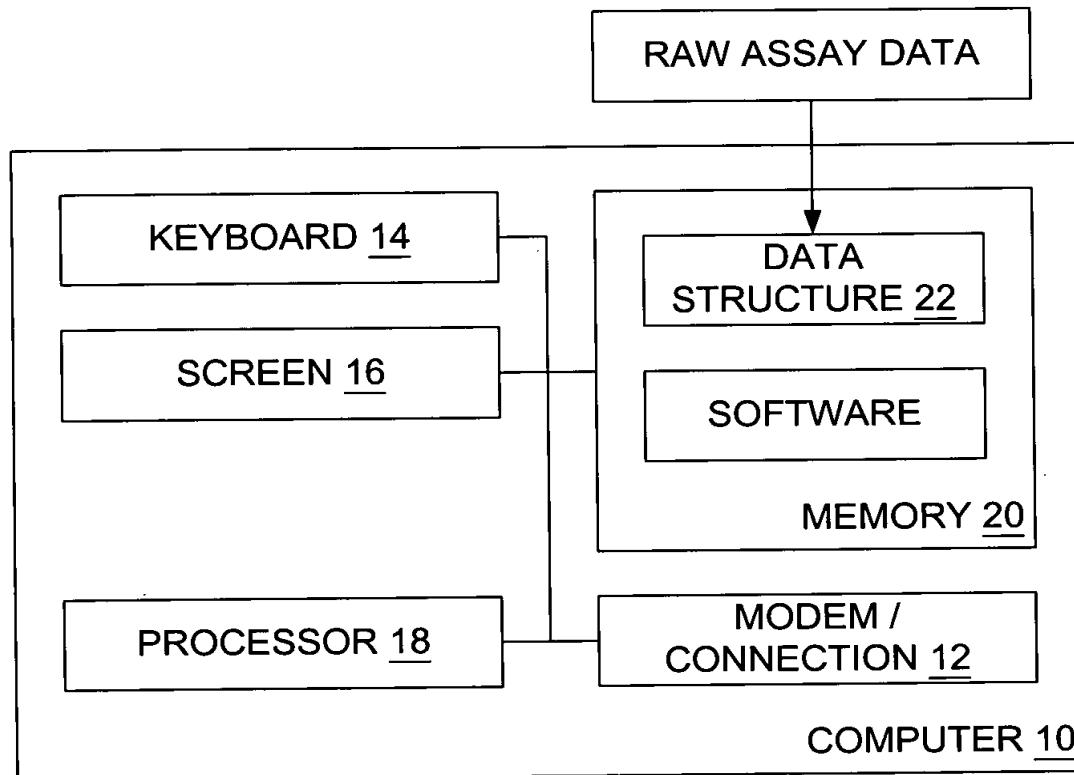


FIG. 2

RECEIVE RAW MEASURED DATA VALUES  $x_{ijp}$  FROM SAMPLE WELLS  $i, j$  OF ALL PLATES  $p$  INTO DATA STRUCTURE 22 - 301

RESISTANTLY FIT RAW DATA  $x_{ijp}$  FOR EACH PLATE  $p$  TO ROW-COLUMN ADDITIVE MODEL: - 303

$$y_{ijp} = \mu_p + R'_{ip} + C'_{jp} + e_{ijp}$$

LONGITUDINALLY (PLATE-WISE) NON-LINEARLY SMOOTH EACH  $R'_{ip}$  AND EACH  $C'_{jp}$ : - 305

$$y_{ijp} = \mu_p + R_{ip} + C_{jp} + e'_{ijp}$$

NON-LINEARLY SMOOTH EACH  $e'_{ijp}$  ACROSS THE PLATES  $p$  BY PLATE POSITION TO APPROX. ANY INTERACTIVE EFFECT: - 307

$$y_{ijp} = \mu_p + R_{ip} + C_{jp} + \text{smooth}_p(e'_{ijp}) + r_{ijp}$$

NORMALIZE EACH  $r_{ijp}$  BY STANDARD DEVIATION VALUE DERIVED FROM ALL  $r_{ijp}$ 's ON PLATE  $p$  TO GET SCORE: - 309

$$\text{score}_{ijp} = r_{ijp} / (\text{standard deviation value})_p$$

FIG. 3